BEEBLET

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COMPUTER USER GROUP

NZ (inc)

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NEXT MONTH..

Using the Beeb in Video Production, using indexs, and the DATA statement, many short listings, reviews and the incoming President's report.

****

BEEBLET is edited by Bruce Wills who may sometimes be tracked down on 861-662 (h) or 720-030 (wk).

DISCLAIMER

The views of the reviewers, the Editor and other contributors are not necessarily shared by the BBC/ACORN COMPUTER USER GROUP OF NZ INC.

EDITORIAL

****

This will be the last newsletter sent out to all 1984/85 members. Only financial 1985/86 members will recieve the issues from May.

****

There is a considerable debate proceeding at present about what the User Group is all about : what should it be doing and how best can it go about this? This was reflected in Anne's article in the March issue, and Tim's reply in this Beeblet. The AGM also spent some time on these questions, with strong representations to revise the subscription rate and or newsletter eminating from the Aucland region. Looks like the National Committee is going to be rather busy for a while..

These are issues on which everyone can make useful contributions to the debate : and Beeblet offers one channel through which nationwide discussion can proceed. Lets here your views!

****

COMPETITION

A prize of $50-00 will be awarded to the best program (and associated documentation) sent in to Beeblet over the next four months. Any program qualifies, but I am particularly interested in obtaining reasonably well written games programs. If I get sufficient entrants in any one general category (say more than 12 of reasonable standard), then I will try to persuade the committee to offer a separate prize (of at least $50-00) for that category.

****

Quite a lot seems to be happening on the telecommunications front - see Neil Gordan's modem article. I would be interested in hearing what other regions are doing - or thinking of doing.

MINUTES of the ANNUAL GENERAL MEETING

held Wednesday 27/3/85 at the Royal Society Building, Turnbull St, Wellington, 8.00 pm

1. **Apologies:** John Coulson, J & C Cunningham (Tauranga), E Cheyne (Invercargill), B Mycroft (Tokoroa)

2. **A welcome** was extended to Steve Williams and Kerry Koppert from Auckland.

3. **MINUTES** of the Previous AGM were read.
"That the minutes were a true and accurate account of the meeting" - moved Gavin Flower, 2nd Anton Erasmuson. Carried.

4. **MATTERS ARISING** from the Minutes:
a) How successful had the school membership been? - despite mailing advice to every student and teacher in the User Group, only one school had availed them of the scheme.
b) Re the change of the Group's name: - The Registrar of Incorporated Societies required approval from Acorn Computers Auckland under their company seal. Letter with seal has not yet been received despite letters to both Acorn and their solicitors.

5. **CORRESPONDENCE:**
As it pertained to Local Group reports on the agenda, these were deferred.

6. **PRESIDENT'S REPORT**
Circulated with the Agenda a month earlier.
"that the President's Report be taken as read" Moved Jean Heywood, 2nd Neil Gordon. Carried.

7. **LOCAL GROUP REPORTS:**
Extracts from letters from Tokoroa, Invercargill and Tauranga were read out.
Auckland: Steve Williams reported that about 100 were attending each month; not all were members. A committee of half a dozen ran meetings almost as a sideshow, organising a variety of interesting speakers.
Wellington: Anton Erasmuson reported that at their monthly meetings topics had ranged over Chinese WordProcessing, Random Poetry, TVNZ had talked about teletext, and others. A Beginners Basic class was being held before the main meeting this year. Radio Broadcasts over 2YB had proved successful at 300 baud but not 1200 baud. A lot of bulk purchases of printers and disc drives had been actioned.

8. FINANCIAL REPORT

The Statement of Accounts had been previously circulated.
Query re accumulated funds: these appeared as such because although the subscription year was 12 months, this time the accounts only covered a 9-month financial year; there were still 3 months before income could be expected which had to be covered. There was also stock of magazines valued at $1000 which were really more of a liability. The publicity budget ($500) had not yet been spent.
The previous year subscription had been set with advice from the Printers of the likelihood of a 30% increase in magazine costs; however the extension of the price freeze had meant this had been delayed.
"that the financial report be adopted" moved Jean Heywood 2nd Tim Ryan. Carried.

9. "That the 1985/6 subscription be set at an annual fee of $30; a Joining fee of nil, and a student group rate at $20 per person" moved Gavin Flower, 2nd Neil Gordon.
Discussion on the motion covered the following points:
Gavin Flower thought the subscription rate should be higher; that any decrease would jeopardise the Group and magazine
From the financial position, the apparent surplus was only temporary;

Auckland people felt they weren't getting value for money, and didn't want to subsidise the national group through an apparently high meeting fee; suggested the option of a cheaper subscription that did not include the magazine, or a 1-page national sheet rather than a full magazine trying to compete with Beebug and other professional magazines;
perhaps we were trying to be too ambitious.
The Editor asked whether the Treasurer had any idea of what level of cut back would be needed to effect substantial cost decreases. Figures not available - dependant on number of pages, stock of back issues required to be kept; but the magazine alone accounted for $22 of members fees before postage of it was taken into account; costs running around $900 per month.

Given fairly static expenses, we could expect a surplus of $1200 with a membership of 500.
With only 400 members, this would result in a $200 deficit.

Although it was felt time to reappraise the User Group efforts, any change should not be attempted by the meeting, particularly as rural members were not present.

NZ Micro had a subscription of $12, and put out a bi-monthly magazine; Aucklanders thought $30 for the BBC group too much. It was pointed out that their magazine had fewer pages and only half the issues of Beeblet, and was now being included in 'Computer Input'
The Treasurer had prepared a budget based on a membership of a) 400 members and

b) 500 members.
A survey was being sent to members with Renewal notices, including a question on whether members did in fact buy other magazines, where they would like efforts of the Group placed etc.

It was noted that in terms of the Constitution the magazine was not the major part of the group; and that there was a need for a national contact as evidenced by a query in the Invercargill report that was able to be answered by an Auckland member.
The Editor had had extreme difficulty prising information out of local groups. A survey of past, present and non-members was suggested.

Since the motion about subscriptions setting a specific amount had been circulated well in advance of the meeting, the *President would put it to the* vote. If carried, a further motion about these matters could be put.

The motion was put and carried on voices.

A motion to the incoming committee:
"that the National Committee urgently canvas members, and as far as possible non-members, about what they want to pay for in the way of magazine and other services. Specific options must be given in the canvassing. eg as is, bi-monthly, in Bits & Bytes, reduced in size..."
moved Anton Erasmuson, 2nd Tim Ryan. Carried.

10. "that clause 10e of the Constitution be amended in the following way: the phrase "a Savings Bank" be amended to "a Savings, Trading or Trustee Bank"
besides the reason given on the Agenda, the Treasurer was having extreme difficulty getting statements out of the Post Office.
moved Jean Heywood, 2nd Steve Rose. Carried.

11. ELECTION of OFFICERS:

President	Neil Gordon	Jean Heywood	Keith O'Callahan
Convenor	Tim Ryan	Anne Flower	Anton Erasmuson
Secretary	Anne Flower	David Fung	Neil Gordon
Treasurer	Jean Heywood	Neil Gordon	Keith O'Callahan

There being only one nomination for wach position, the above were declared elected.

Committee:

John Andersen	Jean Heywood	Keith O'Callahan
Warren Willis	Anne Flower	Neil Gordon
Steve Rose	Tim Ryan	Anton Erasmuson
Keith O'Callahan	Bruce Wills	Anton Erasmuson
Bruce Wills	Anne Flower	Jean Heywood
Tony Krzyzewski	Steve Williams	Kerry Koppert

There was no objection to having 6 committee officers; they were declared elected.

12. GENERAL BUSINESS

1. Anne asked for 2 non-committee members to help her envelope the renewal notices this weekend.

2. Tim Ryan suggested that with a few putting a lot in to the magazine, perhaps they should be refunded part of the 1986/7 subscription at the rate of 50 cents per published item.

The constitution does not easily allow such payments, but the committee has power to waive all or part of membership fees.

"The incoming committee should investigate ways of recognising contributions to the User Group by members" moved Neil Gordon, 2nd Tim Ryan. Carried.

3. Steve Williams asked if National Committee members paid the membership fee. He was advised that they did, though many other groups did not expect their committee to pay such fees.

The meeting closed 9.53pm

CLASSIFIED ADS

****

FOR SALE:

MICRO COVERS

Designed to fit the BBC micro. Attractive opaque reinforced plastic, $5-50 posted. To Iain, Box 26078, Epsom, Auckland 3.

CASSETTE TAPES

C10s, boxed, leaderless - available from the UG in multiples of 20 : $26-00 plus $2-00 p&p.

FLOPPY DISCS

3M Brand 5 1/4" DSDD discs - available from the UG ex-stock in (cardboard) boxes of 10: $55-00, which includes p&p.

Pascal-T ROM

Sell : one Pascal-T ROM from HCCS. Limited subset of Pascal using Forth Nucleus and Filing Systems. Any offers?

Contact: P.Yates, C/- Kimberly Rd, R.D.1, Darfield.

HELP !

A forum conducted by Tim Ryan

This is a column designed to offer help to YOU. This means that if you don't ask questions, we can't help you !

I know this has been tried before in this magazine, with mixed success, but I hope to make this more successful by keeping to a regular format, and offering hints and tips as well as questions and answers.

****

Peter C. of Kaikora asks:
Q1 Is it possible to have right justified text in VIEW, when using macros to insert text irrespective of text length ?

A1 No idea Peter, unfortunately I don't have VIEW. Anyone else help ?

Q2 Why does the line 'IF N=0 *DRIVE 0 ELSE *DRIVE 2' not work ?

A2 When BBC BASIC meets a * command, the complete rest of the line, colons and all, is passed to the Command Line Interpreter (as used by OSCLI in BASIC2 - see pages 463-4 in the User Guide). Therefore your line above would send '*DRIVE 0 ELSE *DRIVE 1' to the CLI. Obviously this is not what you meant, and as you pointed out in your letter must be replaced by:

```
IF N=0 THEN *DRIVE 0
IF N<>0 THEN *DRIVE 2
```

Q3 The user guide says a REPEAT may have more than one UNTIL, how ?

A3 It should really not be necessary to have more than one UNTIL for each REPEAT not matter how many tests you wish to make. What I do is simply use a flag. Set it to false immediately after the REPEAT instruction then put in as many tests as you like within the loop and simply test the flag at the UNTIL instruction. Eg:

```
REPEAT
flag=FALSE
A%=A%+1
B%=B%-1
IF A%=1 THEN flag=TRUE
IF A%<23 OR A%>28 THEN flag=TRUE
IF B%>95 OR B%<A% THEN flag=TRUE
UNTIL flag
```

Q4 Last month there was a question about square brackets on Electrons from John Bull

A4 Thanks to all those who answered this one.
There are a number of characters which are accessed by pressing <SHIFT> or <CONTROL> and another key at the same time. Eg: to get a left square bracket involves <SHIFT><COPY> but to get a right square bracket you type <CONTROL><COPY>

From Alister J.
Q5 My tape program does not work, even when I move the program down to &E00, why ?

A5 That's a tricky one. There are a couple of things you may have missed. One is, did you remember to reset PAGE to &E00 - *TAPE does not do this. If you're sure that is correct, and the program works on tape then suspect your moving down routine.

Peter T. of Levin wants to know:
Q6 How do you get into the safe in the Sphinx adventure - he has a map and thinks he has solved the rest.

A6 You have to utter the appropriate magic word - you can hear the safe opening all over the complex!. I seem to recall something about a very small rocky cavern containing many stalactites. (Ed.)

Q7 Has anyone got a circuit for interfacing the Plus 1 printer output (RS232 parallel?) to a serial input DIGITAL LA50-RB.

A7 Anyone who has been experimenting with the Plus 1 might be able to throw some light on this - even if you are not familiar with the printer in question.

Q8 Is there a way of 'ON DIMESIONING' an array so that when you run through a program a second time you can ask a Dim statement to set up an array of a different size?

A8 If you use CLEAR first then, by using a variable (eg N%) in the DIM statement, you should be able to redimension the array the second time through.

Chris C. of Tauranga writes:
Q9 On reserving space on a disc for data files by the use of *SAVE (file name) 0000 1000, how can the file name be written from the variable? ie. A$="FRED":save A$ 0000 1000 saves a file called A$, not FRED.

A9
```
A$="FRED"
   OSCLI "SAVE " +A$ + " 0000 1000"
```
or
```
OSCLI("SAVE " +A$ +" 0000 1000")
```

Q10 We put the following lines into a program (in a PROC) to erase characters from screen lines 5 to 23:
```
10 FOR Y%=5 TO 23:PRINT TAB(0,Y%)SPC(40): NEXT
```

The result of this was that characters were deleted down to line 22 only, and then the program hung up. What did we do wrong?

A10
```
10 V.28,0,23,39,5 : CLS : V.26
```

NB. If there is a graphics window defined, this will be undefined by VDU 26 OR are you in paging mode?

****

Obviously this column can only be successful if I see your problems and/or tips. Hope to hear from you.

Tim (et al)

hear that the Mechanical Engineering Department of Auckland University are using about 12 Beebs with 6502 second processors in their laboratories, for data capture and processing. Apparently Keith Jones would be the appropriate person to contact in the first instance for those interested in the Lab's activities.

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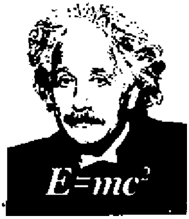


The computer world made simple.

MAILBAG

Tim's Reply:

I would like to put in a word here for all those who belong to the user group but who don't contribute to the magazine. They are not spongers, and I think Ann is being quite unfair when she says they are.

There are many reasons for not being a contributor. Here are just a few.

1. I pay good money for that magazine (which is all I get for my sub anyway) why should I write it as well !

2. I'm only a learner, why should what I have to say be of interest to anyone else ?

3. My only interest is XXXXXX, I don't see the rest of the user group being interested in that aspect of computing.

4. I'm not very good at explaining myself/putting my ideas on paper.

5. I'm a very busy person. I can hardly make time to read the magazine, let alone write it !

6. I'm too young/old to be writing columns in the magazine.

7. I don't want to write articles, and I live out in the boondocks, but I would like to contribute in some other way if someone will give me something to do !

Maybe I've hit some nails on the head, maybe not. All I know is lack of articles does not necessarily make me a sponger ! Just as not working on the committee, etc.

I would like Ann to reply to this letter as there are answers to at least some of the responses above, but perhaps she could do it without being so 'nasty' to those who have perfectly valid reasons for not contributing.

I have been in clubs and groups before, and it is always the few who work for the many, I'm afraid. Why should the ACORN/BBC USER GROUP OF NZ Inc. be any different? "Who were the ones that started (and therefore wanted) the group in the first place?

Please don't anyone take this as a personal attack on them. I am simply trying to state the case for the silent masses, and I would welcome argument !

* * *

Evan Cheyne of Invercargill sent in an interesting report to the AGM : he has had a less than inspiring response to his note on the back of Beeblet. He is interested in hearing from anyone who is accessing Prestel at the moment and especially from anyone who is also accessing Micronet 800. Evidently British Telecom act as an agent for them, collecting subs etc, but the NZ Agent for Prestel BPI say they are not an agent for Micronet 800.

Evan, I understand that there are a number of developments in this area taking place in Auckland, and the Auckland representative at the AGM indicated someone there might be able to help.

Over to Auckland....

* * *

Peter Till writes: "As my job concerns overhead power lines I have written a program to give tension and sag information over various spans for various conductors. This involves various constraints and draws a picturesque graph. When drawn at maximum detail it takes 4 hours to run. If anyone is interested I could send them a copy.

Also a program using random word selection along the lines of Little Red Riding Hood eg. the story might come out as one about enormous white leaping tiara. It can be quite fun and there are at least ten thousand million (US 10 billion) different stories in the one program."

Write to Peter at 12 Graham St, Levin.

* * *

Tony Wright has VIEW and would like to suppress the character "2" which appears at the top left hand corner of the first page of printout, following The 'PRINT' command, when he uses the Logitec print driver.

H. Wiggins of Wadestown has sent in some price comparions collected during a recent visit to Sydney (A$ before duty and sales tax):

BBC B	$790
with 100K drive	$920
AND-01 100K SS drive	$220
6502 2nd processor	$410
Electron	$344
Plus 1	$ 90
Plus 3 disc interface	$446
Retail prices:	
Commodore 64	$389
disc drive	$389
SX 64 (computer, monitor, disc drive, 4 Packages)	$1349
Apple IIc (hardware, monitor, DD, printer and software)	$2200

To arrive at $NZ, add about 50%, plus 10% for customs (sales tax ? -Ed) and freight.

****

ELECTRON USERS..

Mr Wiggins also notes that the March issue of Elbug says that Wordwise or Wordwise Plus cannot be used on the Electron because of the essential use of Mode 7. It also reports that although connection to a modem to an Electron is now possible, there is little software around to enable the Electron to make use of this (Prestel also relies on Mode 7).

Finally, "I have a letter from the English firm BLT Software saying that they have been unable to get a radioteletype program going for the Electron. There are fundamental timing problems associated with the unusual internal clock signal used by the Electron, and the results to date have been unsatisfactory."

Anyone wanting to follow-up these points can contact Mr Wiggins on Wgtn 735-272.

****

Ed's notes:

1) Electron users may find Neil Gordon's modem article of some interest - He has been working on some modem software recently, in relation to a Wellington Bulletin Board project (see Bits & Bytes, April 1984, p12). I am sure we could develop something for the Electron....

2) Wordwise users may find Wordwise Plus rather attractive : according to the ads (eg. Acorn User, January 1985, pp22,23), the revision includes new editing commands (eg. underlining and bold, displayed, indenting against right margin); vastly sped up disc loading and saving; overwriting protection; an associated programming language (typical application : mailmerge); and perhaps most importantly, "Segments" which permit up to 10 additional documents / programs to be available for ready access (virtual memory?).

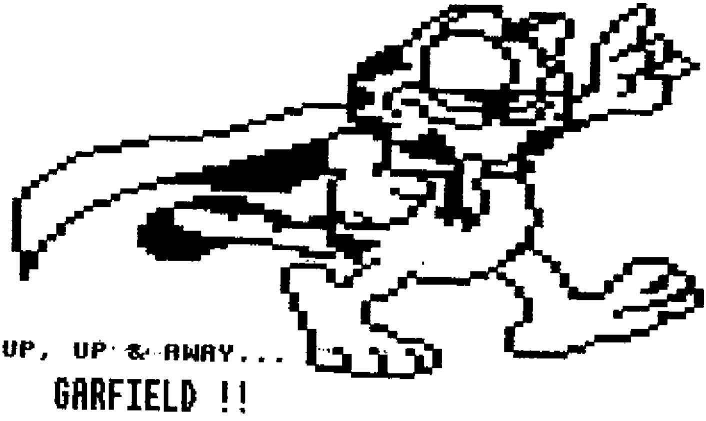
Computer Concepts are prepared to accept your old Wordwise chip and associated package as a trade in : together with another 17 UK pounds this gets you Wordwise Plus. Barsons Technical Services Manager, Tony Krzyzewski, indicated at a recent meeting in Wellington that Barsons might be willing to consider some sort of trade-in provided that the old Wordwise chips are EPROMs.

****

CORRECTIONS

H. Wiggins article, p15, March 1985, should include:
"*DUMP Displays a file in hex and ASCII"

GCF's System Integer Chart listing, and one or two other listings (spooled into Wordwise rather than printed directly), also in the March edition, contain a number of " "s. The character missing is the broken vertical line found on the \ key immediately to the left of the left arrow key. Wordwise uses this as a pad character...


UP, UP & AWAY...
GARFIELD !!

HIGH PRECISION ARITHMETIC

Anton Eras. Mar'85

A hobby of mine is developing algorithms for math functions. If these are to be accurate to 32 bits, then one sometimes needs calculations with more than 32 bit precision so as to plot the error resulting from various shortcuts. So I have developed simple high precision methods. In passing, this has resulted in programs that, for instance, calculate PI to 1000 decimal places - A quite futile exercise, but interesting. The program below shows the methods used, in a situation where I had a need for 20 dec. place logs.

```
  1 REM Program to calculate the logs ( to base e ) of
  2 REM  the integers 2 to 200 or so.
  3 REM Each log is derived from the previous one
  4 REM Accuracy is determined by places%
  5 REM     Anton Erasmuson,Jan '85
  6
 10 MODE 3
 20 places% = 10 :REM Decimal place accuracy DIV 4
 30 log$ = STRING$(places%*4+5," ")
 40 DIM result%(places%)
 50 DIM term%(places%+1)
 60 K% = 10000
 70 FOR integer% = 1 TO 200
 80   PROCfirstterm
 90   REPEAT
100     PROCaddterm
110     PROCnextterm
120     UNTIL pointer% ) places%
130   PROCoutput
140   NEXT
150 END
160
170 DEF PROCfirstterm
180 pointer% = 0
190 denom% = -1
200 factor% = 2*integer%+1
210 term%(0)= 2*factor%*K%
220 FOR I%=1 TO places%
230   term%(I%) = 0
240   NEXT
250 factor% = factor%*factor%
260 PROCnextterm
270 ENDPROC
```

```
280
290 DEF PROCaddterm
300 now%=0
310 FOR I%=pointer% TO places%
320   now% = (now% MOD denom%)*K% + term%(I%)
330   result%(I%) = result%(I%) + now% DIV denom%
340   NEXT
350 ENDPROC
360
370 DEF PROCnextterm
380 denom% = denom% + 2
390 now% = 0
400 FOR I% = pointer% TO places%
410   now% = (now% MOD factor%)*K% + term%(I%)
420   term%(I%) = now% DIV factor%
430   NEXT
440 PROCshiftpointer
450 ENDPROC
460
470 DEF PROCoutput
480 FOR I% = places% TO 1 STEP -1
490   result%(I%-1) = result%(I%-1) + result%(I%) DIV K%
500   result%(I%) = result%(I%) MOD K%
510   NEXT
520 log$ = ""
530 count% = 5 - (places%*4)MOD 5
540 now% = result%(places%) + K% DIV 2
550 FOR I% = places%-1 TO 0 STEP -1
560   now% = now% DIV K% + result%(I%)
570   FOR J% = 1 TO 4
580     log$ = CHR$(now% MOD 10 + 48) + log$
590     count% = count% + 1
600     now% = now% DIV 10
610     IF count% MOD 5 = 0 THEN log$ = " " + log$
620     NEXT
630   NEXT
640  log$ = "  " + CHR$(now% MOD 10 + 48) + "." + log$
650 PRINT integer% + 1, log$
660 PRINT
670 ENDPROC
680
690 DEF PROCshiftpointer
700 pointer% = pointer% - 1
710 REPEAT
720   pointer% = pointer%+1
730   UNTIL term%(pointer%) > 0 OR pointer% = places%+1
740 ENDPROC
```

RAILROAD DIAGRAMS

GCF

Do you know the syntax of the INPUT statement? Even the User Guide gave up on giving the syntax of it ("too complicated for a useful yet simple description"). They try to explain each command in a "travesty of Backus-Naur Form" - their words, p.198.
BNF notation can easily get complicated, but there is yet another system for describing the syntax of command words etc - via RAILROAD diagrams.

These diagrams are a way of representing all the legal ways of putting together a statement. You start at the left-hand side, and follow any track, finally ending up at the right-hand side. You are allowed to follow a track which loops around as many times as you wish (in theory. In practice...), provided you obey the arrows. Any symbol not inside angular brackets ("<" and ">") must be written as shown; the angle bracket statements must be replaced as appropriate

Back to that INPUT statement.
a syntax diagram on its side.
Notes:
a) Without BASIC II the ";" options are not available.
b) Prompts are not necessary.
c) Several different prompts and variables may appear in the same INPUT statement.
d) TAB(,) and ' can be used to position the prompts.

EXAMPLES:

1. Taking the most direct track:

```
    INPUT  <string variable>
  30 INPUT A$
```

2. Indulging in a bit of looping, you could end up with something like this:

```
     INPUT <prompt> , <integer variable> , <prompt> , <string
variable> , <prompt> , <real variable>

   30 INPUT"Age in years",Y%,"Sex M/F",sex$,"weight in kg",mass
```

3. A journey along the top track could end up as:

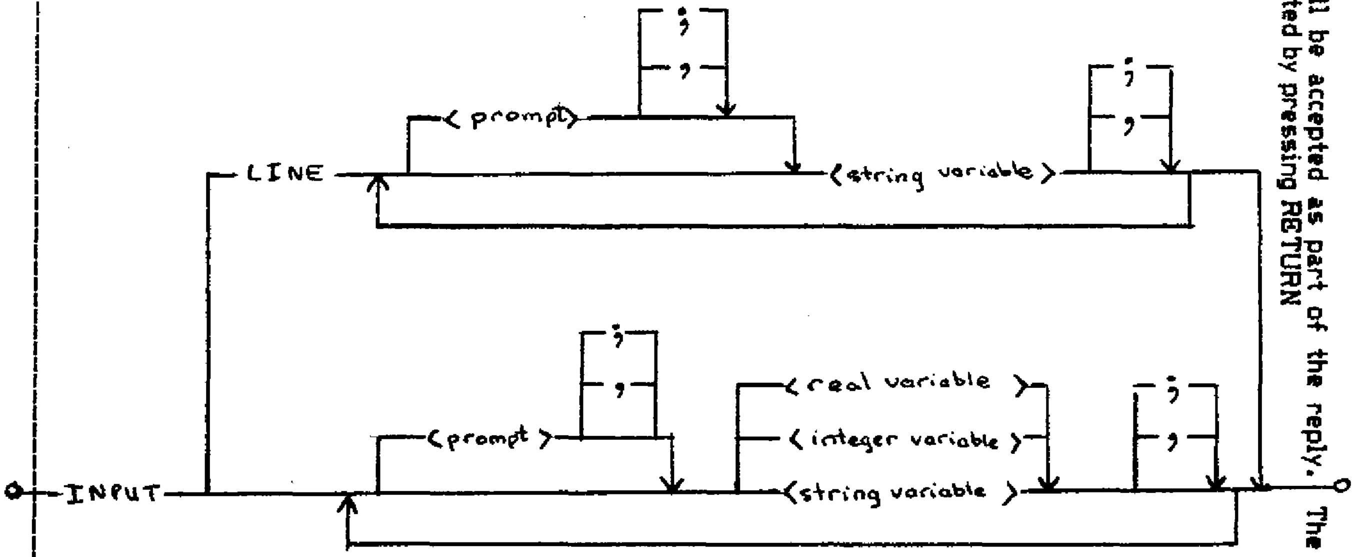
```
     INPUT LINE <prompt> <string variable>
   30 INPUTLINE"Please list your most attractive features"lies$
```

Note that by using the LINE keyword, leading spaces, commas anywhere and anything else will be accepted as part of the reply. The string (lies$) is only terminated by pressing RETURN

"INPUT" syntax diagram

Note a) zero or more spaces are allowed between any "component".

b) TAB(,) and ' can be used to position the prompts.



VSAS

Very Simple Adventure System Part I

Want to create your own adventure games, but perhaps lack the programming capabilities? If you are only interested in the story line, skim through this article, type in the listing, and have fun. Otherwise, read on, and have fun...

This is the first of a series of articles showing how adventure Interpreter programs can make writing adventures straightforward. The task of writing an adventure program is split into:
a) writing an adventure interpreter program
b) writing your adventure in a special format.
This means that you can concentrate on your adventure without getting bogged down in special programming techniques, because the interpreter has been provided for you. The example given in the listing could easily be replaced by your own adventure.

Lines 10 to 330 are the interpreter program - only 33 lines!, and they are followed by a series of DATA statements which describe the adventure.

VSAS DESCRIPTION

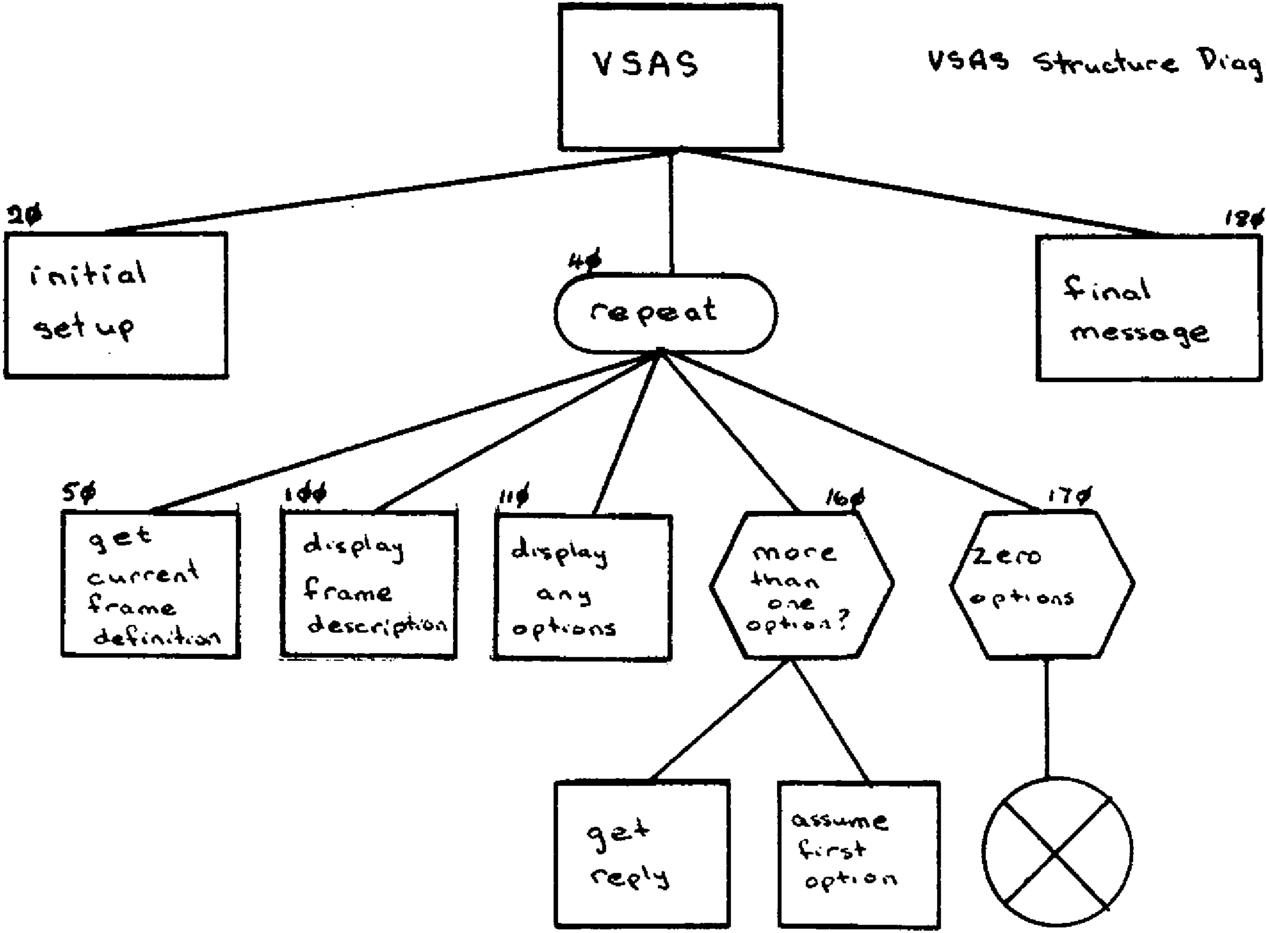
When played, this system looks like a series of multi-choice questions!
There is no requirement for the computer to understand words (Take, Get, Put, Examine etc), nor incorrectly typed in responses (so no need for 'arfle barfle gloop' [Level 9 Snowball])
It is specified as a series of numbered 'frames' (usually rooms). The start of each frame is denoted by the "@" symbol, followed by the frame number, and its description. Subsequent DATA statements contain the options for that frame. Each option starts with a "*", and the frame number that would be called upon next if that choice were selected. For example on screen:

You can see some stairs, a ladder poking out of a pit, and a wooden box.
a) Go up stairs
b) Open box
c) Descend ladder

In DATA statements, see lines 460-490

The logic involved in moving the player from one frame to another, along with the screen formatting and getting a response from the

VSAS Structure Diagram



player are all handled by the Interpreter.

DESIGNING ADVENTURES:

This is largely up to you, but first some hints. Try to plan your adventure first before coding it. Initially, just list the frame descriptions you want, then consider the options you will allow the player. Remember that although specific options may seem to make life too easy, it is possible to make the choice very difficult by having several plausible yet deadly options!

PROGRAM LISTING

If you are not so interested in the technical details (yet!), type in the listing, and play on.

```
 10 REM  VSAS  -  Very Simple Adventure System
 20 DIM frame%(8)
 30 F% = 0
 40 REPEAT
 50   RESTORE
 60   REPEAT
 70     READ A$
 80     UNTIL (LEFT$(A$,1) = "@") AND (VAL(MID$(A$,2)) = F%)
 90   READ A$
100   PRINT '''A$'
110   C% = 0
120   REPEAT
130     READ A$
140     IF LEFT$(A$,1) = "*" THEN PROC_option
150     UNTIL LEFT$(A$,1) = "@"
160   IF C% > 1 THEN PROC_reply ELSE F% = frame%(1)
170   UNTIL C% = 0
180 PRINT "<<< GAME OVER >>>"
190 END
200
210 DEF PROC_option
220 C% = C% + 1
230 frame%(C%) = VAL(MID$(A$,2))
240 READ A$
250 PRINT CHR$(&60 + C%);" - ";A$
260 ENDPROC
270
280 DEF PROC_reply
290 REPEAT
300   R% = (GET OR &20) - &60
310   UNTIL (R% >= 1) AND (R% <= C%)
320 F% = frame%(R%)
```

```
  330 ENDPROC
  340
  350 DATA @0,"WELCOME TO THE GOLDEN ADVENTURE"
  360 DATA *10,Ready.
  370 DATA *0,Again.
  380 DATA @10,You are in a large gold room with a door
  390 DATA *20,Wait.
  400 DATA *30,Open the door.
  410 DATA @20,Roof collapses and you are killed!!!
  420 DATA @30,Door opens and you can see some stairs  going down.
  430 DATA *20,Pause!
  440 DATA *40,Walk down stairs.
  450 DATA *50,Run down stairs.
  460 DATA @40,"You can see some stairs, a ladder poking out of a pit, and a woo
den box."
  470 DATA *10,Go up stairs.
  480 DATA *60,Open box.
  490 DATA *70,Descend ladder.
  500 DATA @50,You trip up and are killed!!!
  510 DATA @60,The box is empty.
  520 DATA *40,Disappointed?
  530 DATA @70,You are now half way down a deep pit.
  540 DATA *80,Jump!
  550 DATA *40,Climb up.
  560 DATA *90,Climb down.
  570 DATA @80,"Oh, dear! It was a long way down. You   are killed!!!"
  580 DATA @90,At the botton of the ladder there is a  narrow crawlway to the ea
st and a        trapdoor below you.
  590 DATA *70,Climb up.
  600 DATA *100,Go east.
  610 DATA *110,Examine trapdoor.
  620 DATA @100,It is dark and you are confused!
  630 DATA *90,Go forward.
  640 DATA *120,Go backwards.
  650 DATA *130,Say ‘XYZZY’
  660 DATA @110,"This section is still under development, enter at your own peri
l"
  670 DATA *90,Think!
  680 DATA *999,Open trapdoor.
  690 DATA @120,You have crawled a long way up and can  see a golden glow from t
he floor ahead.
  700 DATA *140,Go forwards.
  710 DATA *100,Go backwards.
  720 DATA @130,You must be in the wrong adventure -    that does not work here.
```

```
730 DATA @140,The golden floor opens beneath you!
740 DATA *10,Fall ?
750 DATA @999,You are now left to your own imagination!
760 DATA *110,Turn back!
770 DATA *12345,Continue at your own Peril !!
780 DATA @12345,Must be very last data statement!
```

PECULIAR LINE PRINTING

Anton, March 85

This little program is largely a PROCedure that slowly and noisily prints a string. Really an anti-boredom device when printing instructions, or some other screen output. PROCoddline uses a method of generating random numbers that will give a repeating sequence of 82 shuffled numbers. Only seven sequences are permitted, (line 170), but as they start randomly within the repeat loop, the variation limits are not apparent. The string to be printed is limited to 82 characters, but that isn't too restricting. I could have increased the loop by using MOD 257 in line 210, (256 in lines 150 and 190) and line 170 becoming I%=146+1.15*RND(9) but this seemed a little excessive. Other pseudo-random uses for such loops may occur to you. Their big advantage over the supplied RND function is that they are easily exhausted. That is, all possible results are covered quickly.

```
  1 REM Peculiar line printing
  2 REM  Anton E., Mar '85
  3
 10 MODE6
 20 P$ = "Algie met a bear"
 30 Q$ = "The bear met Algie"
 40 R$ = "The bear was bulgy"
 50 S$ = "The bulge was Algie"
 60
 70 PROCoddline(P$)
 80 PROCoddline(Q$)
 90 PROCoddline(R$)
100 PROCoddline(S$)
110 END
120
122 REM First 82 characters of W$ pr
inted
126
130 DEF PROCoddline(W$)
140 LOCAL A%,B%,I%,K%,Y%
150 A% = RND(82):REM Sequence start
160 B% = LEN(W$)
170 I% = 51+RND(7): REM 7 possible s
equences
180 Y% = VPOS
190 FOR K% = 1 TO 82
200   IF A% <= B% THEN PROCoutletter
210   A% = (I%*A%)MOD 83
220   NEXT
230 SOUND &11,-5,10,10
240 ENDPROC
250
260 DEF PROCoutletter
270 PRINTTAB(A%,Y%) MID$(W$,A%,1)
280 SOUND &11,-10,A%*3,-1
290 wait% = INKEY(10):REM Speed cont
rol
300 ENDPROC
```

VSAS part II

The rest of this article covers various ways of formally representing the syntax of VSAS "adventure" code. These explanations will also come in useful when getting in to the more advanced systems in later articles (SAS, PAS,... see March'85 'Beeblet').

VARIABLE USAGE
A$ - temporary string which contains the last DATA item read
C% - Is the total number of options defined for the current frame. This must not exceed the dimension of the frame% array.
F% - the current frame number. Starts at zero.
frame% - an array to hold the frame numbers associated with the current frame
R% - the modified response to an option. The ASCII value of the character is converted to the letter's position within the aplhabet.

An example - see the screen output above, and refer again lines 460-490:
C% is 3 (as spelt out in lines 470,480,490 - all lines starting with a "*" following the selected frame.
F% is 40 - line 460: the @ means the following is a frame description; the number after it is the frame number.
R% - used in line 300 - R% can be up to the value of C% plus &60. So if C%=3, then an acceptable response from the player will be a key pressed that has an ASCII value in the range &61 to &61+C% (&63) or "a", "b", or "c".

PROGRAM NOTES
Initially an array (frame%) is set up to allow for up to 8 possible options (a,b,c,d,e,f,g,h in multi-choice terms). The current adventure never has more than 3 options.
The first frame to be displayed is set to zero (F%=0). The main loop starts and does not finish until the player has run out of options (UNTIL C%=0)

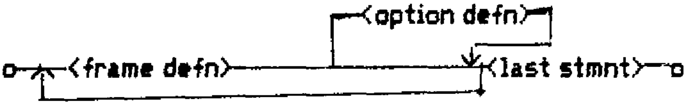
At the start of the main loop, there is a RESTORE to ensure that the next READ gets the first DATA item. The next loop reads through the DATA until the new current frame is found. That frame's description is displayed on screen, the option count is set to zero (C%=0), and a check is made to see how many options have been specified. Any options found will also be printed to screen, each one preceded by "a", "b" etc. If there is more than one option, the player is given a choice of options to respond to. The current frame number (F%) is changed to match that required in response to the player's choice.

When there are no options specified, the program puts out a suitable message and ENDs.

TAKING THE VSAS TRAIN

This level of formal notation is rather an overkill for the simplicity of VSAS, but this style of notation could be useful when describing later systems.

1.VSAS adventure:



2. frame definition:

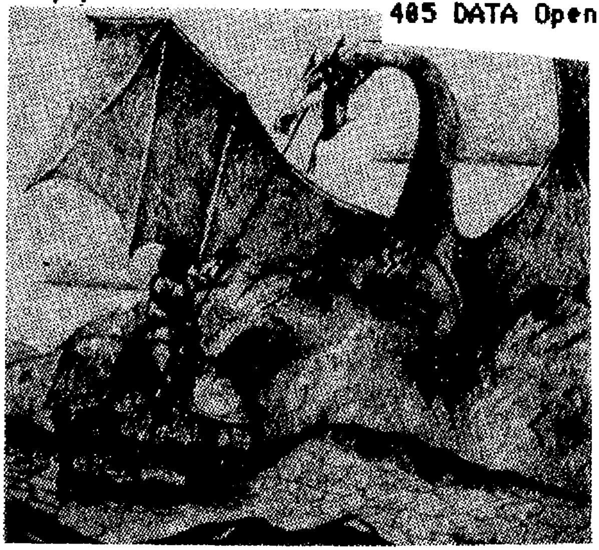
o——@——<id>——,——<text>——,——o

3. option definition:

o——*——<id>——,——<text>——,——o

<id> is any positive integer
<text> is any descriptive string
<last statement> is simply a dummy <frame defn> which is "never used"! However, without it you would get 'OUT OF DATA...' error messages.
NB any comma can be replaced by <carriage_return> DATA eg:

```
400 DATA *30,Open the door  ==>  400 DATA *30
                                 405 DATA Open the door
```



MUSIC 500

John H.

Are you a former musician, composer, and arranger who had to give up your career because of physical disability, and who then forged a new career in computer programming, working mainly in FORTH? If so, have we got a peripheral for you.

The MUSIC 500 was designed by Hybrid Technology Ltd and is made by Acorn Computers. It is a polyphonic synthesiser, intended to be controlled by a BBC microcomputer, and to play through your stereo system. This reveiw is based on one night's playing with it, after someone else set it up. Therefore all comments are provisional.

Unlike those who regard the manual as a last resort, I prefer to start with it. This manual was fairly well produced, except for a couple of slips in the proofreading, one of which unfortunately ruined one of the examples. The tone of the manual went from guidance for absolute beginners to expert's reference, with nothing in between. The beginner's part seemed to me to be very repetitive. The expert's section, which covered most of the advanced facilities, I found rather terse, and anyone trying to learn how to use these facilities would have to do a lot of experimenting.

This is a programmed synthesiser, as distinct from one controlled in real time from a keyboard or the like. Therefore, it needs a language to program it in. The one supplied is based on FORTH, i.e. everything is done backwards. If you find this confusing, *EXEC and *SPOOL work in the system, so it would be possible to create your own programming system that translates your preferred notation to that of the system. However, for simple use, this would not be worthwhile, as the provided notation is reasonably simple.

The programming system is a full programming language, with repetition, conditional execution, subroutines, and basic arithmetic provided. The description of non-musical facilities in the manual is rather sketchy, and I/O is almost nonexistent. I think however, that it would be possible for someone who understood the hardware to incorporate some form of real time control routine.

Most of the hype concerning synthesisers relates to their ability to imitate various conventional musical instruments. In practice, there are very few synthesisers that can come close to a good imitation of many instruments and this is not one of them. Almost all the sounds I heard had a definite electronic tinge to them. However, this is not a serious criticism. As this is a programmed device, it is of use mainly as a tool for composers and arrangers rather than as a performance instrument. The sound quality is quite adequate for this sort of use.

The MUSIC 500 is a polyphonic synthesiser. This would normally be expressed by saying that it has multiple voices, but in fact it has three levels of polyphony, and the term voice is used for the middle level.

The highest level is that of the Player. Each player can be programmed independently, to create complex counterpoints and the like.

A player with one Voice can play a melody line or part. With multiple voices, a player can play chords, using one voice for each note of the chord. While this could also be done by programming multiple players, the use of voices greatly simplifies it.

The lowest level is the Channel. A multi-channel voice is capable of richer sound textures than a single channel voice.

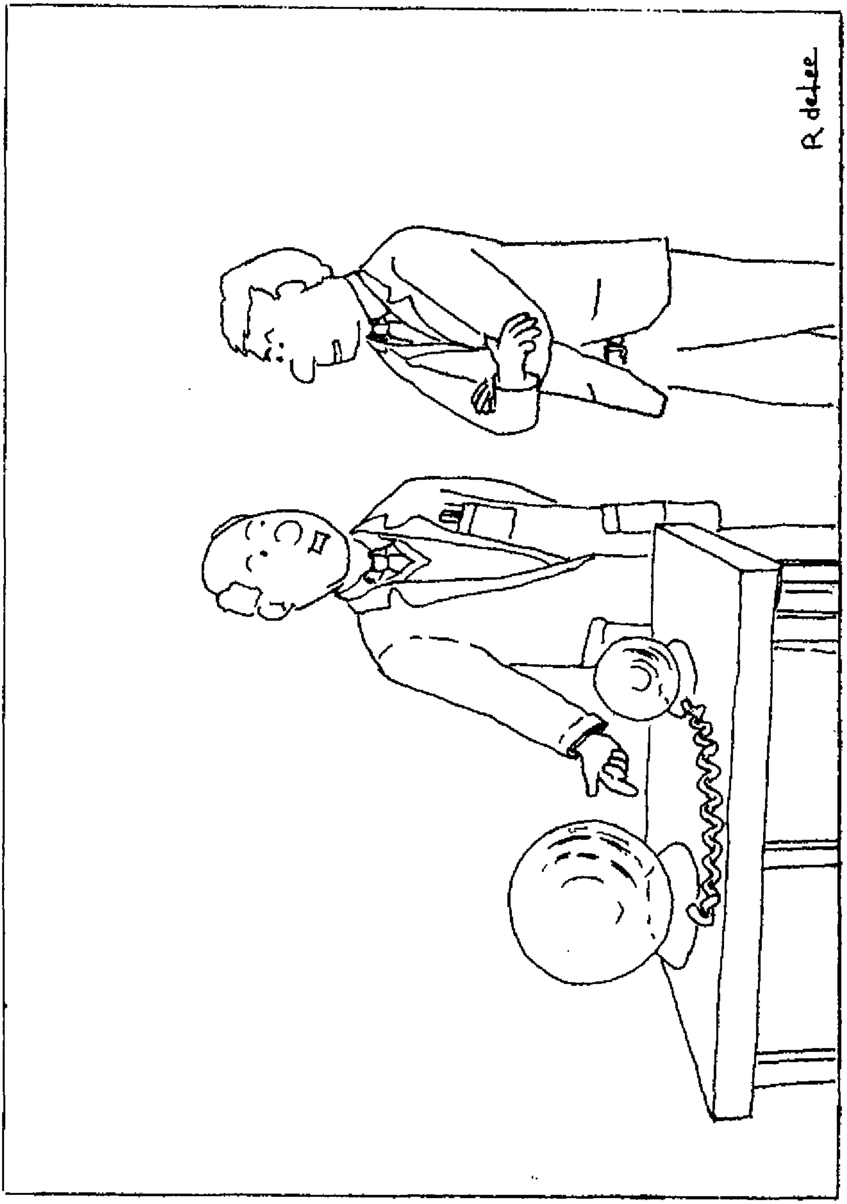
A maximum of sixteen channels, eight voices, and seven players is available. While this would not give you the exact effect of an orchestra actually playing in your living room, it is enough to enable you to do a great deal.

Who would want to buy one? If it were cheaper, it would be of great use to beginning music students, enabling them to further and test their understanding of musical concepts and how they relate to what is heard, without the need for the long, slow process of mastering an instrument first. I think though that it costs too much to interest many such students.

A more likely market would be serious musicians with an interest in composition and arrangement. To these, it could be a valuable tool, enabling them to try out their new works without the need to get a group of musicians together. I think a professional or committed amateur in this area could well justify the price tag, especially if the micro had been originally bought for something else.

One other possibilty was mentioned in the opening paragraph. To someone who is interested in music but suffers from a handicap which prevents playing an instrument, this device offers great possibilities.

Would I buy one? At a quarter the price, I would already have done so. At half the price, I would be intending to do so. At $800, I probably will, but I will have to think hard about it.



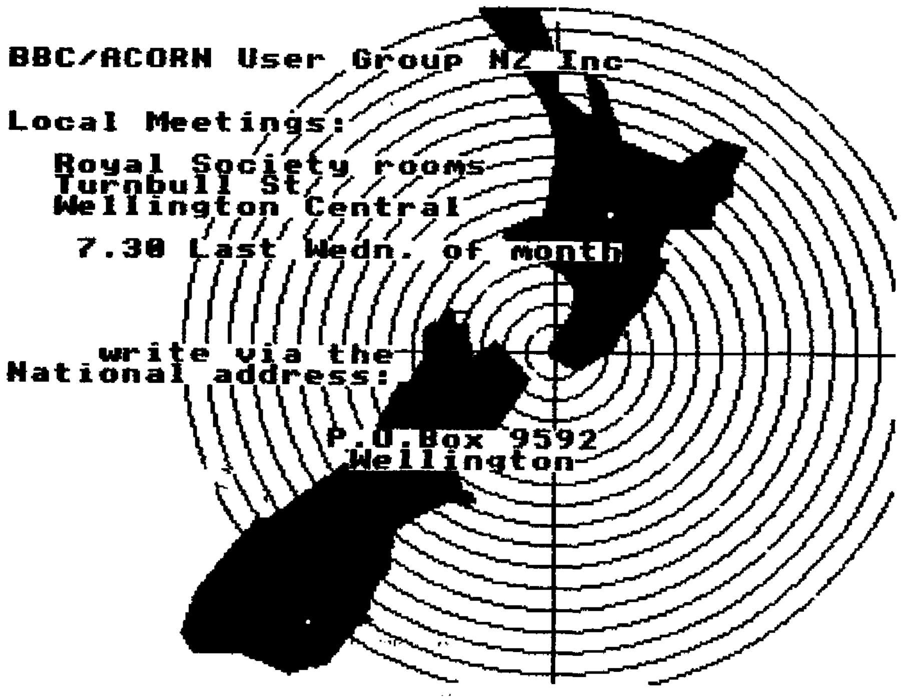
'With this model, we hope to enter the clairvoyant market'

MAP OF NEW ZEALAND

Anton Br., Mar'85

The program "NewZiln" is an adapted excerpt from a program for broadcast over Access Radio, Wellington. /The broadcast was a complete failure. Evidently 1200 baud was a bit too fast. A broadcast a month later at 300 baud did generate some success. /Garry Clark of the BCNZ is working on the technical problems and we should be able to write a glowing account at some future date. As cruddy old ZX81's can get programs by this method, we do want parity at least.

The map fills N.Z. by an economical triangle plotting method. This minimises the DATA statements, but makes changing the DATA difficult. Best plot it out by hand first! Adding a line 415 wait% = INKEY(200) will also make the method plainer. The scale can vary but anything beyond PROCnewziln(10) is silly. But negative scales, PROCnewziln(-3), are odd but acceptable. I'll leave you to put in the cities and towns. And of course, change lines 140 & 150 to centre NZ on your own cabbage patch.



BBC/ACORN User Group NZ Inc

Local Meetings:

Royal Society rooms
Turnbull St
Wellington Central

7.30 Last Wedn. of month

write via the
National address:

P.O.Box 9592
Wellington

```
    1 REM   **** Map of New Zealand **
**
    2 REM Plotted as a series of trian
gles.
    3 REM Anton E., Jan'85
    4
   10 MODE 1: REM Not MODE specific
   20 VDU29,800;500;
   30 DIM map%(85,1)
   40 PROCreadinmap
   50 PROCnewziln(2)
   60 END
   70
   80 DEF PROCreadinmap
   90 LOCAL I%,K%
  100 REM Centred on Wellington
  110 K%=1000
  120 FOR I% = 0 TO 85
  130   READ map%(I%,0)
  140   map%(I%,1) = map%(I%,0) MOD K%
-200
  150   map%(I%,0) = map%(I%,0) DIV K%
-200
  160   NEXT
  170 ENDPROC
  180
  190 DEF PROCnewziln(scale)
  200 LOCAL I%
  210 FOR I%=1 TO 6
  220   PROCregion(I%)
  230   NEXT
  240 ENDPROC
  250
  260 DEF PROCregion(reg%)
  270 IF reg% = 1 THEN begin%=0:fin%=1
6:REM Auck
  280 IF reg% = 2 THEN begin%=17:fin%=
41:REM Taihape
  290 IF reg% = 3 THEN begin%=42:fin%=
53:REM Nelborough
  300 IF reg% = 4 THEN begin%=54:fin%=
64:REM ChCh
  310 IF reg% = 5 THEN begin%=65:fin%=
80:REM South
  320 IF reg% = 6 THEN begin%=81:fin%=
85:REM Stewart Is.
  330 PROCpaint
  340 ENDPROC
  350
  360 DEF PROCpaint
  370 LOCAL I%
  380 MOVE scale*map%(begin%,0),scale*
map%(begin%,1)
  390 MOVE scale*map%(begin%+1,0),scal
e*map%(begin%+1,1)
  400 FOR I% = begin%+2 TO fin%
  410   PLOT 85,scale*map%(I%,0),scale
*map%(I%,1)
  420   NEXT
  430 ENDPROC
  440
```

```
  450 REM   Coding of the data points
  460 REM The  (x,y) ordinates for eac
h point are coded as
  470 REM  one number. The first 3 dig
its = x, then 3 digits
  480 REM  for y. Wellington is define
d as (200,200), so would
  490 REM  be coded 200200 if wanted.
The triangle plotting
  500 REM  method needed careful plann
ing, requiring points
  510 REM  to zigzag from coast to coa
st. Think before changing!
  520 REM The scale (of 6.4Km per unit
) is an accident of my
  530 REM  tracing and plotting method
s.
  540
  550 REM Data: North Cape to Coromand
el
  560 DATA 158405, 149403, 156398, 164
383, 173385, 159301
  570 DATA 188379, 185344, 201347, 195
326, 200333, 202304
  580 DATA 214320, 230308, 210322, 222
336, 214342
  590 REM Data: East Cape to Egmont to
 Wellington
  600 DATA 280304, 277309, 282290, 258
296, 282280
  610 DATA 230308, 274275, 202304, 272
264, 195270, 253263
  620 DATA 188268, 248253, 176262, 249
248, 178254, 252248
  630 DATA 204240, 242224, 210232, 235
218, 209220, 227202
  640 DATA 196200, 210191
  650 REM Data: Nelson and Marlborough
  660 DATA 160221, 151222, 152221, 139
211, 152214, 139197
  670 DATA 159214, 132186, 164149, 163
198, 188187, 173206
  680 REM Data: Christchurch and Westw
ards
  690 DATA 163124, 159122, 162129, 153
124, 156131, 142121
  700 DATA 154143, 114153, 164149, 127
105, 132186
  710 REM Data: Canturbury Plains to B
luff
  720 DATA 142121, 114153, 124109,  69
115, 123090,  62114
  730 DATA 116081,  34077, 112067,  27
056, 115064,  32047
  740 DATA 107060,  54047,  94042,  77
037
  750 REM Data: Stewart Island
  760 DATA  55032,  58035,  56028,  66
025,  51017
```

COMMUNICATIONS AND MODEMS

by

Neil Gordon

Introduction

We are in the early stages of a communications revolution in New Zealand, with more and more people acquiring modems and hooking their computers up to the telephone lines. This has come about through the falling price of modems, the increasing numbers of home computers, the establishment of Videotex services, the setting up of computer bulletin board systems, and the liberalization of Post Office requirements. This article covers some of the basics of communication over the phone lines, the mysteries of Post Office type approval, the promise of cheap modems, and what can be done with them.

Serial Communication

Of necessity, long distance computer communication is serial. That is, instead of sending all eight bits of a byte (or character) in parallel as is done between say a computer and a printer, the bits are sent one at a time along a single line. Transmission speeds are expressed in bits per second (bps) or baud. The two terms are not identical, as baud refers to the number of signal elements sent per second. By encoding 4 bits within one signal element, it is possible to transmit at 2400 baud yet achieve a 9600 bps transmission rate. However, modems used for home computers all encode one bit per signal element, so bps and baud mean the same thing.

Serial communication can be synchronous or asynchronous. For synchronous communication, each end of the line is effectively synchronised to the same clock and data are sent in a continuous stream, with every eighth bit marking the start of a new character. A transmission rate of 1200 bps then corresponds to 150 bytes per seconds.

Asynchronous communication is generally used for the slower speeds used by home computers. Since the two ends are not synchronized we need some means of flagging the start and end of each character. Usually, the communication line is at a logic level of 1 (mark) when it is idle, with no data being transmitted. The start of a new character is flagged by transmitting a single bit at logic level 0 (space) - the 'start bit' - followed by seven or eight bits of data (lowest order bit first), an optional parity bit for error checking, then one or two 'stop bits' at logic level 1 to flag the end of the character and ensure separation from the next character. The most common format is one start bit, eight data bits, no parity, and one stop bit, which needs ten bits to transmit each character, plus any idle time between characters. Then, 1200 bps corresponds to no more than 120 bytes per second.

On the BBC microcomputer, serial communications are handled by a 6850 Asynchronous Communications Interface Adaptor (ACIA). It allows seven or eight bit characters with no, odd, or even parity, and one or two stop bits. (See Chapter 20 of the Advanced User Guide for a detailed description of the ACIA). Speeds available are 75, 150, 300, 1200, 2400, 4800, 9600 and 19200 bps and, unlike for some other computers, the transmit and receive speeds can be different. It is rumouredthat the Electron will also allow serial communication, via a cartridge plugged into the Plus-1 interface.

By international agreement, standards have been set for the electrical levels that should be used for transmitting serial data. The most common is the RS232 standard, equivalent to the American EIA (Electrical Industries of America) standard. An updated version is the RS423 standard implemented on the BBC microcomputer, which is generally compatible with RS232 but allows for transmission at longer distances. For both RS232 and RS423 a voltage of less than -3 volts indicates logic level 1 (mark), and greater than +3 volts level 0 (space). For bidirectional communication at least three wires are needed - a transmit line, a receive line, and a ground or zero voltage level. The standards specify another 22 lines for various purposes, of which only the RTS and CTS line are implemented on the BBC. The RTS (Request To Send) line is an output line which is set low (logic 1) when the BBC is ready to accept data. If the RS423 input buffer is getting full it will be set high to indicate that no more data should be sent for the moment. The CTS (Clear To Send) line is an input line which is low (logic 1), if the device at the other end is ready to receive data. To connect two BBCs together, one's RTS line is connected to the other's CTS and vice versa, and one's transmit line is connected to the other's receive and vice versa. (See page 53 of the July 1983 'Acorn User' for the circuit and simple programs for file transfer.)

Modem Standards

Such direct connections cannot be done through the telephone network, which is designed for transmission of voice frequencies over two wires rather than digital signal levels on five wires. Transmitted digital data must be converted to tones which can be sent over the telephone lines to the receiver where they are converted back to digital signal levels. The former function is called MODulation and the latter DEModulation - hence the name MODEM for the device used.

Again, international standards have been set for the methods of modulation for various transmission speeds and modes. For 'full duplex' communication, in which transmission of data can take place in both directions at once, it is clearly necessary to use different sets of tones for transmission from each end of a link. One set of tones is referred to as the 'originate' set, and the other the 'answer' set. In 'half duplex' communication, transmission can take place in only one direction at once, so just the one set of tones are needed. Of course, some fancy software is required so that both ends don't try and transmit at the same time.

For home computer use over the telephone, the most common standards used in New Zealand are referred to as V.21 and V.23. V.21 allows for 300 bps full duplex communication. The originate tones are 980 Hz (cycles per second) for mark and 1180 Hz for space, and the answer tones 1650 and 1850 Hz. V.23 (mode 2) was designed for 1200 bps half duplex communication, with frequencies of 1300 Hz (mark) and 2100 Hz (space), but also includes a 'back channel' at 75 bps using 390 Hz (mark) and 450 Hz (space) tones. The back channel was supposed to be used for control functions and checking on modem operation, but in practice has been used to allow full duplex communications of 75 bps in one direction and 1200 bps in the other. This is the standard used for Videotex services in New Zealand (and Great Britain, under the Prestel system), with transmission from the home terminal at 75 bps (perfectly adequate since few people can type faster than 7.5 characters per second!) and reception from the remote computer at 1200 bps.

Modem Hardware

Until recently, modems to produce and decode these tones required complex and expensive circuitry, and were restricted to one communications standard. About a year ago, a versatile modem chip became available which supports all the common lower speed standards, including V.21, V.23 and the Bell standards used only in the United States. This chip, the AM7910, is often referred to as the 'World Chip' since it supports so many modes.

Circuits using this chip appeared in 'Wireless World' (see May, June and July 1984 issues). It is also used in the Mega Modem Kit sold by Dick Smith for $249 (see February 1985 'Bits and Bytes'), and (I believe) in the Nightingale, WS 2000, and Unicom (now Demon) modems sold in the United Kingdom for 60 to 150 pounds. All these modems are designed for direct connection to the telephone line. (The standard method uses a plug matching the new-style jack points. It will cost you about $40 to have such a jack point put into your home.) The alternative is to use acoustic coupling, where the output from the modem goes to a speaker fastened to the telephone mouthpiece, and the input is from a microphone by the telephone earpiece. An acoustic coupled circuit was published in the July 1984 'Micro User'.

Good sound insulation is essential with acoustic coupling, otherwise there will be transmission errors caused by household noises being picked up. It usually works well for 300/300 bps, and should be alright for 1200/75. Direct coupling is preferable to minimise transmission errors. Until recently, the only direct coupled modems that could be used in New Zealand were those rented out by the Post Office. Now, with the exception of 'auto-answer' modems which must be rented from the Post Office, it is possible to use 'type approved' modems, which have been submitted to the Post Office and met their standards.

Type Approval Requirements

The Post Office standards for direct connect modems are (understandably) high. The following information about them is based on talking with a number of Post Office staff and presented in good faith, but I cannot take responsibility for inaccuracies due to my misunderstanding or unintentially misrepresenting what I was told.

First, a mains-powered modem must pass power tests (usually done by the DSIR at a cost of some $400) - the Post Office is not terribly keen about 240 volts being sent down telephone lines to zap their linespeople and exchanges. This means that there is no way that they will approve kitsets such as the Mega Modem, since there is no control over the standard of construction and no guarantee that mains voltage will not end up on the telephone line. If the modem is powered from the computer's power supply, the combination of computer and modem apparently has to be tested for type approval. However, a modem powered by batteries or by an ordinary commercial 'battery eliminator' should not be subject to this power test requirement.

Second, a modem must not be able to transmit Bell tones, since these correspond to tones reserved by the Post Office for signalling and toll calls. For this reason they are not keen on the World Chip, though the problem can be overcome by disabling the Bell standard options when the modem is constructed.

Third, the modem must not transmit extraneous frequencies, particularly above about 3300 Hz, since (among other things) this will cause interference with other telephone calls when a number of telephone channels are multiplexed together for longer distance transmission. (No problems arise with acoustic coupling since the ordinary telephone microphone has a poor frequency response and doesn't let the higher frequencies through.) Unfortunately, the World Chip generates lots of noise. The Post Office will not approve modems using it unless the output is properly filtered to reduce the noise. The Mega Modem has no filtering, so fails on all three counts. I believe that the Unicom (Demon), Nightingale, and WS 2000 modems do not have filtering either, so unless modified by some importer will not be approved by the Post Office. (If anyone out there has brought in one of these and opened it up to have a look, please write and tell use what's in there and how well it works.) This is in spite of their having British Telecom approval - due to different telephone systems here we apparently have higher standards.

With one exception, the only modems which have been type approved for direct connect so far are those restricted to the V.23 1200/75 bps standard, used for Videotex. This includes the Acorn Prestel adaptor (for about $600) which does not use the World Chip, and a Commodore modem (about $430) which does use it but which has had the 300/300 bps option factory-disabled (since it was very noisy?) As this article was being finished, just before Easter, I learnt that a multi-mode (V.21 and V.23) modem manufactured by Datacomm had been approved, but was unable to find out any details on price or features in time to include here.

The Wellington Modem Project

Connecting a non-type approved modem is not only illegal but may be bad news for other telephone users. If you do it, on your own head be it. The options are to obtain a type-approved modem or to use acoustic coupling. Following a meeting at the end of March, the Wellington local group set up a modem project to design a Kitset multi-mode modem (allowing 300/300, 1200/75 and 75/1200 bps) which would be acoustically coupled. It is expected to cost about $150. We hope to demonstrate a prototype at the Wellington meeting at the end of April, then take orders from local members and have a workshop to assemble the modems under supervision. Software with all the desirable goodies mentioned later will also be provided free.

At the time of writing the project is in a state of uncertainty, due to very recent indications from the Post Office that, as a bona fide User Group, we may be able to build our own type-approved direct connect modems providing they are not mains powered, the output from the World Chip is filtered properly, and construction is under the supervision of the User Group to ensure that specifications are met. The modems should still cost about $150. Watch out next month for updates on this project.

Bulletin Boards

Well, having got your modem, what do you do with it? The main uses are talking to computerised bulletin boards, transferring files to other computers, obtainig information from databases (such as Videotex systems), and using the computer as a terminal to much larger computers (such as at work). Videotex services cost $200 to $300 a year for a subscription, plus 8c a minute for connect time (wherever you are in NZ), whereas bulletin boards are generally free unless you are making a toll call, so I'll concentrate on those for this article.

Most, if not all, bulletin boards in NZ use 300 bps full duplex communication. You will need to set up your modem for 'originate' mode, and the remote computer will transmit back to you using the 'answer' tones. Then you dial up the bulletin board number, wait for the auto-answer modem at the other end to 'pick up the phone' and respond with a tone. At that point, you either put the phone handset into your acoustic coupler or switch the phone line over to your direct coupled modem. The minimal software you need at this stage is to make your computer act as a 'dumb terminal'. Any character typed on the keyboard should be transmitted out over the telephone line to the remote computer, and those received back are sent to your computer display. (See, for example, Duncan McEwan's program in the December/January 1983/4 newsletter.) Usually you will need to press RETURN a few times to get the remote computer's attention, then go through a logon sequence during which you may have to give a password.

You can now browse through various messages left on the bulletin board, which may be for general consumption or addressed to you personally and readable only by you and the sender. General information typically includes details on the operation of the bulletin board, topics of interest regarding particular computers, notices of meetings and equipment for sale. As well as reading messages you can, of course, leave messages for other people too.

As a matter of courtesy, you should spend as little time as possible logged onto the bulletin board, so that other people can get onto it too. To that end, you should really use more sophisticated software that lets you send all output to a printer and/or disk file as well as the screen, so that you can log on and off as quickly as possible then check what happened later on. Also, if sending a message, you should save logon time by composing the message 'offline' using your own word-processor and spooling it to a disk file, or perhaps by using *BUILD, then *EXECing the file when logged onto the bulletin board.

Some bulletin boards allow 'downloading' of files from the remote computer to your own. A common way of doing this securely is to use the XMODEM, or MODEM7, or Christensen protocol. In this, the file is transferred in 128 byte blocks preceded by a block number and followed by checksum information. If the receiving computer finds that the checksum doesn't tally, there must have been a transmission error and it requests the transmitting computer to resend that block.

In Wellington, the Wellington Micro Society has recently set up a bulletin board system on a VAX 750 owned by Bryce Francis Ltd, a commercial printing firm which has very generously donated use of the computer and an auto-answer modem at nights and weekends. The telephone number is (04) 856-288. You can log on as user name MICRO with password MICRO and leave your name and telephone number so you can be registered as a user on the system. Please call only between 8pm and 8am during the week, or anytime on weekends. Bulletin boards also exist in Auckland, and quite likely in other centres. All you people out there - write in and tell us the details so we can publish them.

We hope to be able to store the programs from the last few issues of Beeblet on the Wellington board, so that you can download them rather than having to type them in. Also, it would be useful to be able to upload files containing articles for Beeblet which the Editor could later download. Such transferring of files can also be done between two computers with compatible software without the intermediary of a bulletin board. This is best done by setting up the sender to transmit at 1200 bps and receive at 75 bps, with the converse at the other end.

Final Comments

Until recently there was little point in acquiring a modem - even if you could afford one, there was nobody else out there to talk to. With cheap modems becoming available we will rapidly pass the point of critical mass, where there are sufficient users to provide more and more reason to get a modem to communicate with them directly or via bulletin boards. I hope as many as possible of you can join in this exciting communications revolution.

HALL OF FAME

PUBLISHER:	GAME	HISCORE	SCORER
Acorn	Arcadians	21,470	Malcolm Mac
	Aviator	5,610	Joanne C's Dad
	Countdown	246	Andrew P.
	Elite	Elite	J&C Climo*
	Hopper	27,196	Jenny B.
	Meteors	46,200	Andrew P.
	Planetoid	413,875	Peter J.
	Rocket Raid	140,777	Mark R.
	Snapper	250,000	Susan
	Starship Command	9,495	Robert N.
	Super Invader	20,420	P. Leadley
?	Cylon Attack	157,970	Aaron
Alligat.	Bug Blaster	37,642	Steve W.
Aardvark	Zalaga	86,200	Malcolm Mac.
	Frak	1,026,820	Andrew P.
	Monsters	175,110	Geof P.
Amcom	Fortress	89,900	Andrew P.
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FG Soft.	Mutant Defender	6,900	Steve W.
	Lords of Time	925/1000	Steve W/Kerry K.
	Snowball	900/1000	Steve W./Dianne
Prog.Pow	DangerUXB(Lvl 1)	286,690	Steve W.
	Felix the Factory	7,000	Dianne S.
	Frenzy	915,468	Dianne T.
	Killer Gorilla	91,000	Susan
	Laser Command	109,225	P. Leadley
	Moon Raider	112,350	P.Leadley
Sup.Soft	Alien Dropout	24,200	David E.
	Q*BERT	30,260	Dianne S.
	Roadrunner	97,000	Andrew P.

* (disc) 2 tasks performed

HALL OF FAME

USER GROUP MEETINGS

AUCKLAND: -meets 2nd Wednesday of the month, 7.30pm, Conference Rooms, Auckland Secondary Teachers College,60 Epsom Ave, Epsom. ph Dave 770-630 x 510(bus) or Kerry 695-355.
-North Shore: meets last Wednesday of the month, 7.30pm, Salvation Army Hall, Glenfield Road, Glenfield ph Chris 419-0543 (wk)
CHRISTCHURCH: -fortnightly workshops, Monday 6.30pm at Hagley High School. ph. Michael 582-267.
DUNEDIN: -Phone Martin McDowall 42-031
HAMILTON: -last Thursday of the month 4.45pm Waikato Tech B-block staff -room. Ph. Peter, Hamilton 392-500 x897(bus) or Alison, Morrinsville 6695.
HAWKES BAY: -Alternative months Hastings & Napier. Contact Kendall Napier 435-624, Bob Taradale 446-955, Mitch Hastings 778-235.
INVERCARGILL: -Phone Evan 330-444 Invercargill.
PALMERSTON NORTH:-Phone Tom Skinner 83-009(wk)
TAUPO: -Contact Dave 84-215.
TAURANGA: -every second Wednesday. ph. Chris & Jane 65-076.
TIMARU: -Phone Lloyd van der Krogt Timaru 61-412.
TOKOROA: -meets first Friday of each month, Tokoroa High School, 8pm. Phone Brian 67-625 Tokoroa.
WELLINGTON: -meets last WEDNESDAY of the month, 7.30pm, Royal Society Lecture Theatre, Turnbull St, Thorndon.ph. Anton 286-289 or Warren 787-005.
OTHER CENTRES: - let us know and we will publish details here.

THE NEWSLETTER:

CONTRIBUTIONS:-most welcome. Listings should be sent in on tape ordisc.(Tape - 2 copies, one at 300 baud please). A 35c stamp gets your tape / disc returned too. Please include written explanation of listing; text only material welcome too.

DEADLINES:- For a particular issue, the last day for material is the last day of the month prior to publication.

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MEMBERSHIP:

Membership of the users group is on payment of an annual subscription from April to March. For the 1985/6 year it is: $30.00, plus $5.00 for Auckland & Wellington members as a local branch levy, which entitles attendance at meetings as detailed above. Renewing members get all back issues of the current year.

THE BBC/ACORN COMPUTER USER GROUP OF NZ INC, P.O.Box 9592, Wellington.

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